

IN THE CLAIMS

Claims 1-4, 8-9, and 29-34 are pending. No claims have been amended.

1. (Previously Presented) A transistor comprising:
 - a gate electrode formed on a gate dielectric layer formed on a substrate;
 - a pair of n type source/drain regions formed in said substrate on opposite sides of said laterally opposite sidewalls of said gate electrode; and
 - wherein said gate electrode has a central portion with a first work function formed on the gate dielectric layer over the substrate region between said source/drain regions and a pair of sidewall portions with a second work function which overlap a portion of said source/drain regions, wherein said second work function is lower than said first work function.
2. (Previously presented) The transistor of claim 1 wherein said central portion has a second work function of between 3.9 to 4.3 eV.
3. (Previously presented) The transistor of claim 2 wherein said sidewall portions of said gate electrode have a work function of between 1.5 to 3.8 eV.
4. (Previously presented) The transistor of claim 1 wherein said sidewall portions have a first work function which is at least 0.1 eV lower than said central portion.
5. – 7. Cancelled
8. (Previously presented) The transistor of claim 1 wherein said sidewall portions of said gate electrode are formed from a material selected from the group consisting of scandium (Sc), magnesium (Mg) and Yttrium (Y).
9. (Previously presented) The transistor of claim 1 wherein the central portion of said gate electrode comprises a conductive material selected from the group consisting of poly-silicon, titanium, zirconium, hafnium, tantalum, and aluminum.

10. – 28. Cancelled

29. (Previously presented) A transistor comprising:

 a gate electrode formed on a gate dielectric layer formed on a substrate;
 a pair of p type source/drain regions formed in said substrate on opposite sides of said laterally opposite sidewalls of said gate electrode; and
 wherein said gate electrode has a central portion with a first work function formed on the gate dielectric layer over the substrate region between said source/drain regions and a pair of sidewall portions with a second work function which overlap a portion of said source/drain regions, wherein said second work function is higher than said first work function.

30. (Previously presented) The transistor of claim 29, wherein said central portion has a work function of between 4.9 to 5.3 eV.

31. (Previously presented) The transistor of claim 29, wherein said sidewall portions have a work function that is at least 0.1 eV higher than the work function of said central portion.

32. (Previously presented) The transistor of claim 29, wherein said sidewall portions of said gate electrode comprises a conductive material that is selected from the group consisting of poly-silicon, platinum, and ruthenium nitride (RuN).

33. (Previously presented) The transistor of claim 29, wherein said central portion is formed from a material selected from the group consisting of ruthenium and palladium.

34. (Previously presented) The transistor of claim 30, wherein said sidewall portions have a work function of between 5.4 to 6.0 eV.